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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,026	11/14/2003	Pete D. Vogt	5038-340	2857
32231	7590	06/12/2006	EXAMINER	
MARGER JOHNSON & MCCOLLOM, P.C. 210 SW MORRISON STREET, SUITE 400 PORTLAND, OR 97204			TABONE JR, JOHN J	
			ART UNIT	PAPER NUMBER
			2138	

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/714,026	<b>Applicant(s)</b> VOGT, PETE D.	
	<b>Examiner</b> John J. Tabone, Jr.	<b>Art Unit</b> 2138	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10202004, 02092006</u> | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-31 are pending in the application and have been examined. (see claim objections).

#### ***Drawings***

2. The drawings are objected to because the examiner believes that the depiction in the drawing of receivers and transmitters (112) in F1G.13 is not in concord with the T0-5 and R0-5 signal lines. The examiner, being one of ordinary skill, would have expected a receiver line (R0-5) to be drawn as a "right-handed buffer" (in reverse form from that which is drawn), and not as a left-handed buffer as is depicted. The examiner also believes the transmitter buffers should be reversed.. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top

margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:

a.) Page 8 line 8 should be corrected to recite, "The target module then merges its response".

b.) Page 13 lines 17-31 and page 19 lines 30-33 describe transmitters and receivers that the examiner believes may be incorrect. The examiner requests that the applicant review these parts of the Disclosure, and verify the correctness of the passages in respect to the drawing, FIG.13 (see objection to said drawing above).

c.) Page 23, line 32 describes the operation in FIG.25 wherein there is a transition to a "hot agent present" operation. But the applicant has labeled this operation in the figure as, "HOT AGENT RESET".

d.) Throughout the specification the phrase "inventive principles of this patent" should be changed to recite "patent application" or "invention" instead of "patent" since this is not a patent. The Applicant is also responsible for correction all other references to "a patent".

Appropriate correction is required.

***Claim Objections***

4. The claims are numbered incorrectly from claim 13, second occurrence, through claim 29. These claims should be renumbered to claim 15 through claim 31. Correction is required. The Applicant is reminded that the claim dependency for each corrected claim should also be changed to correspond to the new reordering. Please note: that all claim rejections, and claim index, etc. will refer to the corrected claim numbers as outlined above.

5. In the interest of maintaining conformity with the instantiation of an antecedent in each of the independent claims, the examiner objects to independent Claims 2-11, 13-18, 20-25, and 29-31 because the claims do not refer back to the independent claim, but rather give the impression that there is a new method/module/system being claimed. In other words, the examiner requests that the applicant change the first word of each of the above dependent claims from "A" to "The".

6. Claim 1 is objected to because of the following informalities: The phrase, "capable of" is not a positive limitation. The phrase conveys the meaning that the limitation may or may not be carried out, and that the device is not necessarily configured to perform the function. Appropriate correction is required.

7. Claim 11 is objected to because of the following informalities: it would appear to the Examiner that this claim should be dependent on claim 10 instead of claim 1. Appropriate correction is required.

8. Claim 12 is objected to because of the following informalities:

a.) Line 6, "the first lanes" should be changed to "the plurality of first lanes".

b.) Line 7, "the second lanes" should be changed to "the plurality of second lanes".

c.) Line 9, "analyzing" should be changed to "analyze".

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 12-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

#### **Claim 11:**

This claim recites the limitation "the loopback unit" in line 1. There is insufficient antecedent basis for this limitation in the claim.

#### **Claim 12:**

The claim limitation "to identify failed lanes" ambiguous and, therefore, renders the claim indefinite. The Examiner does not know which lanes failed or are identified (i.e. the plurality of first lanes of second lanes).

#### **Claim 15: (claim 13, second occurrence)**

This claim recites the limitation "whether a failed lane is a first lane or a second lane". The Examiner does not know whether this is a different set of lanes or the one recited in claim 12 and, therefore, renders the claim indefinite. Clarification and correction is required.

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Claims 13, 14, 16-18:

These claims are also rejected because they depend on claim 12 and have the same problems of indefiniteness.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3, 12-14, 19 and 28-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Bunton et al. (US006961347), hereinafter Bunton.

**Claim 1:**

Bunton teaches a first link interface having a plurality of first lanes and a second link interface having a plurality of second lanes. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26). Bunton also teaches the memory agent (computer 100/server 300, network switch 130, Fig. 2, 3) *is capable of* selectively mapping one or more of the first lanes to one or more of the second lanes. (Abstract, Col. 4, ll. 18-54, Col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

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Claim 2:

Bunton teaches the first link interface comprises a receive link interface and the second link interface comprises a transmit link interface. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26).

Claim 3:

Bunton teaches the first lanes comprise receive bit lanes and the second lanes comprise transmit bit lanes. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26).

Claim 4:

Bunton teaches (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 5:

Bunton teaches the memory agent may selectively map one or more of the first lanes to one or more of the second lanes according to a plurality of mappings. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 6:

Bunton teaches memory agent may selectively map one or more of the first lanes to one or more of the second lanes responsive to a training sequence received on the first link interface. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).



Claim 7:

Bunton teaches the memory agent may retransmit the training sequence through the second link interface. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 8:

Bunton teaches the memory agent comprises a memory buffer (FIFO buffers, Fig. 8).

Claim 9:

Bunton teaches the memory agent comprises a memory module (memory 204, Fig. 3).

Claim 10 and 11:

Bunton teaches the memory agent comprises a loopback unit (adapter 800, Fig. 8), which comprises a multiplexer (Fig. 10).

Claim 12:

Bunton teaches a first link interface having a plurality of first lanes; and a second link interface having a plurality of second lanes. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26). Bunton also teaches the memory agent (computer 100/server 300, network switch 130, Fig. 2, 3) may transmit training sequences having different mapping indicators on one or more of the first lanes, receive return sequences on one or more of the second lanes responsive to the training sequences and analyzing the return sequences to identify failed lanes. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 13:

Bunton teaches the first link interface comprises a receive link interface and the second link interface comprises a transmit link interface. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26).

Claim 14:

Bunton teaches the first lanes comprise receive bit lanes and the second lanes comprise transmit bit lanes. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26).

Claim 15:

Bunton teaches the memory agent may identify whether a failed lane is a first lane or a second lane. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 16:

Bunton teaches the memory agent may transmit test parameters in the training sequences. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 17:

Bunton teaches the memory agent may transmit electrical stress patterns in the training sequences. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 18:

Bunton teaches the memory agent comprises a memory controller. (NORTH BRIDGE 206, alternately a memory controller, col. 7, ll. 9-10).

Clam 19:

Bunton teaches transmitting a first training sequence to a memory agent on a first plurality of lanes, transmitting a first return sequence from the memory agent on a second plurality of lanes responsive to the first training sequence according to a first mapping, transmitting a second training sequence to the memory agent on a third plurality of lanes, and transmitting a second return sequence from the memory agent on a fourth plurality of lanes responsive to the second training sequence according to a second mapping. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 20:

Bunton teaches the second plurality of lanes are the same as the fourth plurality of lanes. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 21:

Bunton teaches the lanes comprise bit lanes. (Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 22:

Bunton teaches the first return sequence comprises one or more groups that are substantially the same as one or more groups in the first training sequence. (Abstract,

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Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 23:

Bunton teaches the second return sequence comprises one or more groups that are substantially the same as one or more groups in the second training sequence.

(Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 24:

Bunton teaches the first training sequence comprises a mapping indicator.

(Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 25:

Bunton teaches the first training sequence comprises an electrical stress pattern.

(Abstract, Col. 4, ll. 18-54, col. 7, l. 18 to col. 9, l. 8, Fig. 4-6, col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

Claim 26:

Bunton teaches the memory agent comprises a memory module (memory 204, Fig. 3).

Claim 27:

Bunton teaches the memory agent comprises a memory buffer (FIFO buffers, Fig. 8).

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**Claim 28:**

Bunton teaches a first link interface having a plurality of first lanes and a second link interface having a plurality of second lanes. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26). Bunton also teaches the memory agent (computer 100/server 300, network switch 130, Fig. 2, 3) may selectively mapping one or more of the first lanes to one or more of the second lanes. Bunton further teaches a memory controller (NORTH BRIDGE 206, alternately a memory controller, col. 7, ll. 9-10) coupled to the memory agent. (Abstract, Col. 4, ll. 18-54, Col. 10, l. 29 to col. 12, l. 8, Fig. 9-12).

**Claim 29:**

Bunton teaches the first link interface comprises a receive link interface and the second link interface comprises a transmit link interface. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26).

**Claim 30:**

Bunton teaches the first lanes comprise receive bit lanes and the second lanes comprise transmit bit lanes. (two lane links 140, Fig. 2, col. 6, ll. 59-65, col. 10, ll. 24-26).

**Claim 31:**

Bunton teaches a second memory agent coupled to the memory agent. (Fig. 7, col. 9, ll. 9-52).

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Espy et al. (US-6128750)

Espy teaches a substantial portion of the independent claims 1, 12, 19 and 28 by re-routing communication paths after diagnostics.

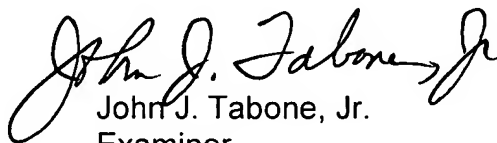
b.) Olarig (US-20030037278)

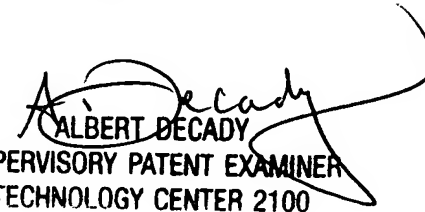
Olarig teaches a substantial portion of the independent claims 1, 12, 19 and 28 in memory remapping system 304 which transfers memory from a failing virtual channel to a fail-over memory.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Tabone, Jr. whose telephone number is (571) 272-3827. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 6/5/06  
John J. Tabone, Jr.  
Examiner  
Art Unit 2138

  
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